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The Tjellefonna fault system of north Western Norway: linking late-Caledonian extension, post-Caledonian normal faulting, and Tertiary rock column uplift with the great landslide/tsunami event of 1756.

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We argue here that the Tjelle rockslide/tsunami of 1756 was a direct product of the ongoing development of tectonic topography in Møre og Trøndelag county. The Paleozoic Møre-Trøndelag Fault Complex was reactivated as a normal fault during the Mesozoic and, probably, throughout the Cenozoic until the present day. Its NE-SW strands crop out between the coast and the base of a c. 2.5 km high NW-facing topographic 'Great Escarpment.' Well-preserved kinematic indicators and multiple generations of fault products are exposed along a well-defined structural and topographic lineament parallel to both the Langfjorden and the Escarpment. The SE-dipping main foliation along the flanks of Devonian folds was reactivated and cut by steeply dipping NE-SW and NW-SE-trending faults and joints, compartmentalizing 15.7 million cubic meters of bedrock. The catastrophic release of this compartment as a giant rockslide into the dark, winter waters of Langfjorden on February 22, 1756 caused a sequence of $\sim$40 meter high tsunami waves that devastated Tjelle and several other local communities.

Because the region is seismically active in oblique-normal mode, and in accordance with scant historical sources, we speculate that an earthquake may have caused the release of the rockslide at Tjelle. Ongoing reactivation of E-W to NW-SE-trending normal faults along much of coastal Mid Norway suggests a structural link exists between the processes that destroy the present-day mountains and those that created

them. In the Langfjorden region in particular, structural geometry suggests additional unreleased rock compartments may be isolated and under normal fault control. Although post-glacial rebound might in large part help drive present-day seismicity, the normal-fault-controlled escarpments of western Norway were at least partly erected in pre-glacial times. Because normal faulting is active along the westernmost onshore portion of Scandinavia, the prevailing concept that tectonics relinquish control to thermal subsidence during the post-rift phase of passive margin evolution bears re-examination.